

Applicant(s): M. Nakagawa
R. Esmailzadeh
Application No.: 10/567,602
Examiner: T. Pham

Amendments to the Claims

1. (Canceled)

2. (Canceled)

3. (Currently Amended) A radio communications system comprising:
base station equipment of a mobile communications network; and
a radio communications apparatus which uses a TDD-CDMA system for communications
with the base station equipment and uses the TDD-CDMA system common to the
communications with the base station equipment and the same frequency band for
communications with other radio communications apparatuses within an ad-hoc network;
wherein

[[when]] a communications path for directly connecting the radio communications
apparatus and the base station equipment is assumed to be a first communications path and
communications paths for connecting the radio communications apparatus and the base station
equipment via the other radio communications apparatuses within the ad-hoc network are
assumed to be second communications paths,

the base station equipment comprises:

measurement means for measuring, for each of the first communications path and the
second communications paths, power required for transmitting a signal and delay time required
for the transmitted signal to reach a communication counterpart; and

communications path selection means for selecting at least any one of the first
communications path and the second communications paths as a communications path to be used
for communications with the radio communications apparatus, based on the measured values of
the power and the delay time and notifying the radio communications apparatus of the selected
communications path; wherein

the communications path selection means determines, for each of the first communications

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path and the second communications paths, a function value of an evaluation function with the measured values of the power and the time as arguments, and selects at least any one among the first communications path and the second communications paths as a communications path to be used for communications with the radio communications apparatus, based on the result comparison of the function values, and

the radio communications apparatus communicates with the base station equipment using the communications path notified by the base station equipment.

4. (Currently Amended) A radio communications system comprising:
base station equipment of a mobile communications network; and
a radio communications apparatus which uses a TDD-CDMA system for communications with the base station equipment and uses the TDD-CDMA system common to the communications with the base station equipment and the same frequency band for communications with other radio communications apparatuses within an ad-hoc network;
wherein

[[when]] a communications path for directly connecting the radio communications apparatus and the base station equipment is assumed to be a first communications path and communications paths for connecting the radio communications apparatus and the base station equipment via the other radio communications apparatuses within the ad-hoc network are assumed to be second communications paths,

the base station equipment comprises:

measurement means for measuring, for each of the first communications path and the second communications paths, power required for transmitting a signal and delay time required for the transmitted signal to reach a communication counterpart; and

communications path selection means for selecting at least any one of the first communications path and the second communications paths as a communications path to be used for communications with the radio communications apparatus, based on the measured values of the power and the delay time and notifying the radio communications apparatus of the selected

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communications path; wherein

the communications path selection means excludes, when tolerance values are set for the power and the delay time in advance, such a communications path that at least one of the power and the delay time thereof exceeds the tolerance value, and

the radio communications apparatus communicates with the base station equipment using the communications path notified by the base station equipment.

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Currently Amended) A radio communications system comprising:
base station equipment of a mobile communications network; and
a radio communications apparatus which uses any communications system of a TDD-
CDMA system, a TDD-TDMA system and a multiple access system based on TDD-OFDM for
communications with the base station equipment and uses the communications system common
to the communications with the base station equipment and the same frequency band for
communications with other radio communications apparatuses within an ad-hoc network;
wherein

[[when]] a communications path for directly connecting the radio communications
apparatus and the base station equipment is assumed to be a first communications path and
communications paths for connecting the radio communications apparatus and the base station
equipment via the other radio communications apparatuses within the ad-hoc network are
assumed to be second communications paths,

the base station equipment comprises:

measurement means for measuring, for each of the first communications path and the

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second communications paths, power required for transmitting a signal and delay time required for the transmitted signal to reach a communication counterpart; and

communications path selection means for selecting at least any one of the first communications path and the second communications path as a communications path to be used for communications with the radio communications apparatus, based on the measured values of the power and the delay time and notifying the radio communications apparatus of the selected communications path; and

the radio communications apparatus communicates with the base station equipment using the communications path notified by the base station equipment; wherein

the base station equipment includes a base station and radio network controller equipment for controlling the base station;

the other radio communications apparatuses in the ad-hoc network include a first ad-hoc terminal capable of wirelessly communicating with the base station and a second ad-hoc terminal capable of communicating with the radio network controller equipment via a wired communications network; and

the second communications paths include a communications path for connecting the radio communications apparatus and the base station via the first ad-hoc terminal and a communications path for connecting the radio communications apparatus and the radio network controller equipment via the second ad-hoc terminal.